

2019



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# CURRENT AFFAIRS

**SCIENCE & TECHNOLOGY**

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## **1. India's First Global Mega Science Exhibition**

### **Why in News?**

- Recently, India's first-ever global Mega-Science exhibition, '**Vigyan Samagam**', was inaugurated at the Science City in Kolkata.
- This multi-venue Science Exhibition, after its successful journey in Mumbai and Bengaluru, is now open for public in Kolkata.

### **About Vigyan Samagam**

- The National Council of Science Museums (NCSM), Ministry of Culture, along with the Department of Atomic Energy (DAE) and Department of Science and Technology (DST) organise this exhibition.
- The primary goals of the Vigyan Samagam are:
  - Expose young minds to the deep mysteries of the Universe and various facets of its evolution.
  - Encourage students to take up science as a career option and contribute to the nation's intellectual capital and growth.
- The Exhibition highlights India's contribution in the world's major Mega Science Projects related to High Energy Physics, Nuclear Physics and Astrophysics.
- The Mega Science Projects in which India is participating are:
  - Large Hadron Collider (LHC) at the European Organisation for Nuclear Research (CERN)
  - Facility for Antiproton and Ion Research (FAIR)
  - India-based Neutrino Observatory (INO)
  - International Thermonuclear Experimental Reactor (ITER)
  - Laser Interferometer Gravitational-Wave Observatory (LIGO)
  - Thirty Meter Telescope (TMT)
  - Square Kilometre Array (SKA)

### **Advantages of Vigyan Samagam**

- Rise to newer technologies which find numerous other applications in day-to-day lives.
  - The World Wide Web, advanced imaging technologies used in modern photography and medical imaging, accelerators used in cancer therapy, are some such examples.
- Spin-offs from such Mega Science Projects have ushered in major shifts in the global technological landscape over time.
- It also helps in building high-tech manufacturing capabilities in the country and promote 'Make in India' for advanced technologies.

## **2. ISRO NavIC**

### **Why in News?**

The Indian Space Research Organisation (ISRO) and Antrix Corporation Ltd. are planning to commercialise India's Regional Navigation Satellite System (IRNSS), called NavIC.

### About Navic

- NavIC (Navigation in Indian Constellation) is an independent regional navigation satellite system being developed by India.
- It is a constellation of seven satellites:
  - Four are located in geosynchronous orbits.
    - A geosynchronous orbit has an orbital period that matches the Earth's rotation on its axis.
    - The synchronisation of rotation and orbital period means that, for an observer on Earth's surface, an object in geosynchronous orbit returns to exactly the same position in the sky after a period of one sidereal day.
  - Three satellites are located in geostationary orbit.
    - A geostationary orbit falls in the same category as geosynchronous orbit, but lies on the same plane as the equator, unlike the geosynchronous orbit.
    - A satellite in a geostationary orbit appears stationary, always at the same point in the sky, to observers on the surface.
  - It is designed to provide accurate position information service to users in India as well as the region extending up to 1500 km from its boundary, which is its primary service area.
- IRNSS will provide two types of services:
  - Standard Positioning Service (SPS) - available to all the users.
  - Restricted Service (RS) - an encrypted service provided only to the authorised users.
- The NavIC System is expected to provide a position accuracy of better than 20m in the primary service area.
- Some applications of IRNSS are:
  - Terrestrial, Aerial and Marine Navigation
  - Disaster Management
  - Vehicle tracking and fleet management
  - Integration with mobile phones
  - Precise Timing
  - Mapping and Geodetic data capture
  - Terrestrial navigation aid for hikers and travellers
  - Visual and voice navigation for drivers

### 3. Samudra Shakti

#### Why in News?

India and Indonesia carried out the maritime exercise “Samudra Shakti” in the Bay of Bengal from 6-7 November.

#### About Samudra Shakti

- Samudra Shakti is a Bilateral Naval Exercise between Navies of India and Indonesia.
- The aim of the exercise is to strengthen bilateral relations, expand maritime co-operation, enhance interoperability and exchange best practices.
- The joint exercises focussed on surface warfare exercises, air defence exercises, weapon firing drills, helicopter operations and boarding operations.
- The strategic partnership between India and Indonesia was elevated to ‘Comprehensive Strategic Partnership’ during the visit of Prime Minister of India in May 2018 and Defence co-operation has been a significant pillar in this partnership.

### 4. Fifth India International Science Festival

#### Why in News?

The Prime Minister Will inaugurate the Fifth India International Science Festival in Kolkata through video conference.

#### India International Science Festival (IISF)

- It is an annual event organised jointly by Government of India and Vijnana Bharati (VIBHA) since 2015.
- IISF is a festival to celebrate the achievements of India’s scientific and technological advancements with students, innovators, craftsmen, farmers, scientists and technocrats from India and abroad.
- The **theme** for this year’s festival is **RISEN India – Research, Innovation, and Science Empowering the Nation.**

#### Objective

- To instill scientific temper among the masses.
- To showcase India’s contribution in the field of Science and Technology.
- To build a strategy for inclusive advancement of Science and Technology.

## 5. Dustlik-2019

### Why in News?

The maiden India-Uzbekistan joint military exercise - Dustlik-2019 begins at Chirchiq Training Area near Tashkent, Uzbekistan.

### Objective

- It focuses on counter-terrorism and involves sharing of best practices and experiences between the Armed Forces of the two countries.
- It will enhance the greater operational effectiveness between two armies.
- To discuss the emerging trends of global terrorism and hybrid warfare.



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